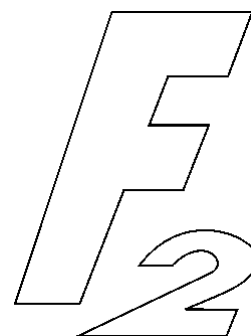


Material Safety Data Sheet

FLUTEC-TG PTMCH

Last updated: 20th May 2002

1 – SUBSTANCE IDENTIFICATION

Trade Name:	FLUTEC-TG PTMCH
Material Type:	Perfluorocarbon
Company:	F2 Chemicals Ltd
Address:	Lea Lane Lea Town Preston Lancashire PR4 0RZ UK
Telephone:	+44 (0) 1772 775804
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Emergency Telephone:	+44 (0) 1772 775833

2 - COMPOSITION

a) Substances	Predominantly perfluoro-1,3,5-trimethylcyclohexane
b) CAS Number	374-76-5

3 – HAZARD IDENTIFICATION

a) Hazard Symbols:	Not applicable
b) Risk and Safety	Keep container tightly closed. Caution, avoid prolonged and repeated breathing of concentrated vapour. Thermal decomposition may produce toxic products. Small amounts of decomposition may occur above 400°C. When using do not smoke. Do not empty into drains.

4 – FIRST AID MEASURES

a) Inhalation:	In case of severe exposure; remove from exposure, rest and keep warm. Apply artificial respiration if breathing has ceased. Obtain medical attention if effects are other than slight.
b) Skin contact:	Remove contaminated clothing and wash off with soap and water. Obtain medical attention if adverse symptoms arise.
c) Eye contact:	Irrigate thoroughly with water. Obtain medical attention if adverse symptoms arise.
d) Ingestion:	Wash out mouth with water. Obtain medical attention if adverse symptoms persist.

5 – FIRE FIGHTING MEASURES

a) Suitable Extinguishers:	Carbon dioxide Alcohol resistant foam Powder Halons Water Fog Water Jets Inert material – Sand, earth, etc Non-combustible material
b) Unsuitable Extinguishers:	Not applicable.
c) Hazardous Decomposition:	Toxic fumes may be produced on thermal decomposition. In the presence of other reactive substances and in a fire situation where hydrogen containing compounds are present, Hydrogen Fluoride and other toxic products may be formed.
d) Special Procedures:	Use water spray to cool containers. Contact with flames gives rise to toxic vapours; avoid inhalation of these vapours. Use approved self-contained breathing apparatus. Non-essential personnel should be evacuated from the area until any fumes have dispersed. Handle contaminated fluid in a ventilated area, avoiding inhalation of vapour.

6 – ACCIDENTAL RELEASE MEASURES

a) Exposure Controls	FLUTEC liquid spillages produce very slippery surfaces which may be hazardous to personnel. Evacuate area. Do not allow spillage to enter drains and watercourse. If water is contaminated inform relevant authority immediately.
b) Personnel Protection:	Wear laboratory coat. Respiratory protection not normally required. Wear impermeable gloves. Wear chemical safety spectacles or goggles.
c) Disposal Considerations:	Absorb in inert material eg. sand, vermiculite absorbent granules, place in plastic container for transfer. Do not allow spillage to enter drains/sewers/water courses. Dispose of in accordance with local authority regulations.

7 – HANDLING AND STORAGE

a) Handling	<p>Do not smoke when handling.</p> <p>Avoid contact of vapour or liquid with red-hot surfaces, flames or electrical arcs as this may give rise to toxic gases such as Hydrogen Fluoride.</p> <p>Do not use sodium or similar metals or their hydrides for removing water from the liquid; other desiccants are acceptable.</p> <p>Allow sufficient ullage when drum filling to allow for thermal expansion.</p>
b) Storage	<p>Store in original, tightly closed, labelled container.</p> <p>Incompatible with Lithium, Sodium, Potassium, Calcium and Barium.</p>

8 – EXPOSURE CONTROLS

a) Occupational Exposure Limit:	None
b) Biological Exposure Limit:	None

9 – PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Clear colourless liquid
Odour:	Odourless
Boiling Point:	127.4 °C
Pour Point:	-70 °C
Molecular Weight:	450
Density:	1.888 kg/l
Viscosity (kinematic):	1.2 mm ² /s
Viscosity (dynamic):	2.28 mPa s
Surface Tension:	17.7 mN/m
Vapour Pressure:	13.1 mbar
Specific Heat:	0.96 kJ/kg °C
Critical Temperature:	269* °C
Critical Temperature:	542* K
Critical Pressure:	18* bar
Critical Volume:	1.5* l/kg
Thermal Conductivity:	61.1 mW/m °C
Solubility in Water:	Insoluble
Solubility in Organic Solvents:	Sparingly soluble in most common solvents. Miscible with CFCs.

10 – STABILITY AND REACTIVITY

a) Stability:	Extremely stable.
b) Conditions to Avoid:	Naked flames, hot surfaces.
c) Materials to Avoid:	Lithium, Sodium, Potassium, Calcium, and Barium.

11 – TOXICOLOGICAL INFORMATION

a) Chronic Effects:	None known
b) Inhalation:	No irritation or anaesthetic effects.
c) Skin Contact:	Non-irritating but hot liquid or vapour may cause thermal burns.
d) Eye Contact:	Non-irritating but hot liquid or vapour may cause thermal burns.
e) Routes of Exposure	Inhalation, skin and eye absorption, ingestion.

12 – ECOLOGICAL INFORMATION

a) Ecotoxicity:	No specific data available
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13 – DISPOSAL CONSIDERATIONS

	<p>Contact manufacturer.</p> <p>Dispose of through an authorised contractor to a licensed landfill site.</p> <p>Do not discharge into drains or watercourses.</p> <p>Large quantities should be incinerated by a waste disposal organisation.</p>
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14 – TRANSPORT INFORMATION

	<p>Non-hazardous liquid not regulated for transport services.</p> <p>UN Number – not applicable</p> <p>IATA/ICAO – not regulated</p> <p>ADR – not regulated</p> <p>IMDG – not regulated</p> <p>Transport name – not applicable</p> <p>Hazchem code – not applicable.</p>
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15 – REGULATORY INFORMATION

a) Hazard symbols:	None
b) Risk and Safety phrases:	S41: In case of fire and/or explosion do not breathe fumes.
c) Other regulations:	Health and Safety at Work Act 1974.
d) Transport Information:	See 14. Transport Information.

16 – OTHER REGULATION

a) Suitability for purpose:	F2 Chemicals Ltd. cannot guarantee the suitability of this material for any particular purpose. It is the responsibility of the customer to satisfy himself that the product is suitable for his purpose. In the event of doubt the customer may contact F2 Chemicals Ltd. for advice.
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